NWSA: 750
FORM: MPS-1077

INDEX NO.
SW/3.0

82

# MPS SERIES WATER COOLED SPOT WELDERS

## 10 and 20 KVA

## Portable or Pedestal Mounted Manual or Air Operated

The MPS Series of resistance spot welders provides fast, clean, economical metal joining.

All models are equipped with a ten-step heat control. Provides for the selection of required current setting for light or heavy gauge material. Operates in conjunction with spot weld timer.

PORTABLE MODELS operate on 50/60 Hz, 230 volt, single phase current and are available in either 10 or 20 KVA. Tong pressure, with 6 inch (15.2 cm) tongs, is adjustable to 600 pounds (272 kg.). This is a virtually effortless accomplishment made possible by hand operated pressure multiple linkage. Air operated, electrically controlled, portable models function efficiently on a minimum of 40 pounds (18.1 kg.) of air pressure from any existing compressed air source. The ball bearing suspension rings provide complete and weightless maneuverability of the portable models to contribute to the efficiency of production line fabrication.

PEDESTAL MODELS, 50/60 Hz, are made for 230, 460 or 575 volt, single phase, operation in either 10 or 20 KVA to be manually or pneumatically operated. Only the 230 volt model detaches for portable use. An all-steel pedestal houses timer and controls, with connections for water, air and a means of adapting the spot welder. Operation can be by foot pedal or electrical foot switch, depending on the particular model.

# SPECIFICATIONS (Subject to change without notice).

| MODEL (See note) below) | PEDESTAL MOUNTED SPOT WELDERS | WORK CAPACITY Combined Thickness Mild Steel | RATED OUTPUT (50% Duty Cycle) | MPS WEIGHTS NET lbs. | MPS WEIGHTS NET kg. | MPS WEIGHTS SHIP lbs. | MPS WEIGHTS SHIP kg. |
|---|---|---|---|---|---|---|---|
| MPS-10FT | Manually operated | 3/16" (4.7 mm) | 10-KVA | 206 | 93.4 | 232 | 105.2 |
| MPS-10AFT | Air operated | 3/16" (4.7 mm) | 10-KVA | 215 | 97.5 | 241 | 109.3 |
| MPS-20FT | Manually operated | 1/4" (6.3 mm) | 20-KVA | 221 | 100.2 | 240 | 108.8 |
| MPS-20AFT | Air operated | 1/4" (6.3 mm) | 20-KVA | 230 | 104.3 | 249 | 112.9 |

| MODEL | PORTABLE SPOT WELDERS | WORK CAPACITY Combined Thickness Mild Steel | RATED OUTPUT (50% Duty Cycle) | MPS WEIGHTS NET lbs. | MPS WEIGHTS NET kg. | MPS WEIGHTS SHIP lbs. | MPS WEIGHTS SHIP kg. |
|---|---|---|---|---|---|---|---|
| MPS-10T | Manually operated | 3/16" (4.7 mm) | 10-KVA | 149 | 67.5 | 196 | 88.9 |
| MPS-10AT | Air operated | 3/16" (4.7 mm) | 10-KVA | 173 | 78.4 | 244 | 110.6 |
| MPS-20T | Manually operated | 1/4" (6.3 mm) | 20-KVA | 169 | 76.6 | 210 | 95.2 |
| MPS-20AT | Air operated | 1/4" (6.3 mm) | 20-KVA | 193 | 87.5 | 255 | 115.6 |

Primary Cable length on portable models is 12 feet, 46" is standard on the pedestal models.

Meets (CSA) (Canadian Standards Association) approval.

## ELECTRICAL SPECIFICATIONS:

| | MODEL | MPS-10 | | | MPS-20 | | |
|---|---|---|---|---|---|---|---|
| SECONDARY SHORT CIRCUITED | TONGS-LENGTH | 6" 15.2 cm | 12" 30.4 cm | 18" 45.7 cm | 6" 15.2 cm | 12" 30.4 cm | 18" 45.7 cm |
| | SECONDARY AMPS. 10% | 9500 | 8500 | 7500 | 14500 | 13250 | 12000 |
| | PRIMARY AMPS. | 100 | 90 | 81 | 200 | 175 | 148 |

## HOW TO ORDER:

Order welder by model and stock number for voltage required.

## MODEL EXPLANATIONS:

10 indicates KVA

"T" indicates weld timer

"A" indicates air operated

"FT" indicates pedestal mounted with foot control.

Putting the symbols together to form a model number, MPS-10AFT. This is an example of an MPS Series Spot welder with a rated output of 10 KVA, air operated, on a pedestal with a foot control.

230 Volts

| MODELS | STOCK NO. | MODELS | STOCK NO. | MODELS | STOCK NO. |
|---|---|---|---|---|---|
| MPS-10T | 900 380 | MPS-10AFT | 900 393 | MPS-20FT | 900 406 |
| MPS-10AT | 900 383 | MPS-20T | 900 400 | MPS-20AFT | 900 413 |
| MPS-10FT | 900 386 | MPS-20AT | 900 403 | | |

460 Volts

| MODELS | STOCK NO. | MODELS | STOCK NO. |
|---|---|---|---|
| MPS-10FT | 900 387 | MPS-20FT | 900 407 |
| MPS-10AFT | 900 394 | MPS-20AFT | 900 414 |

## FEATURES:

- Tong pressure, with 6" (15.2 cm) tongs, is adjustable to 600 pounds (272 kg). Pressure multiplier linkage makes manual use of hand lever virtually effortless.
- Air operated models can be powered from an available compressed air source through air cylinder and electrically controlled 4-way air valve. Operates on a minimum of 40 pounds (18.1 kg) air pressure and up. RFM-2, foot switch, is included with air operated models.
- Portable models operated manually or by air are equipped with 180° ball bearing suspension rings for complete and weightless maneuverability.
- Ten Step Heat Control. The operator has a choice of ten heat settings from which to choose, depending on the thickness of the metal to be welded.
- Adjustable Speed Control Valve on air operated models governs the rate of the tong closing.
- Air operated models are supplied with a 3 second adjustable weld timer and a 6 second adjustable squeeze timer.
- All models operate on 50/60 Hz, single phase AC.
- Both sides of the control circuits are safety fused.
- Air operated models, in addition to timers, include pressure gauge, regulator, air filter and oiler.

## METALS:

Mild, or low carbon steels are readily welded with the resistance spot welding process.

Cold rolled (CRS) and hot rolled, pickled and oiled steels may be spot welded with very little trouble.

Low alloy and medium carbon steels require longer welding time than mild steel to retard the cooling rate and permit more ductile welds.

Stainless steel also requires a slightly longer weld time than mild steel. The rapid quench associated with resistance spot welding is ideal for use with the stainless steels.

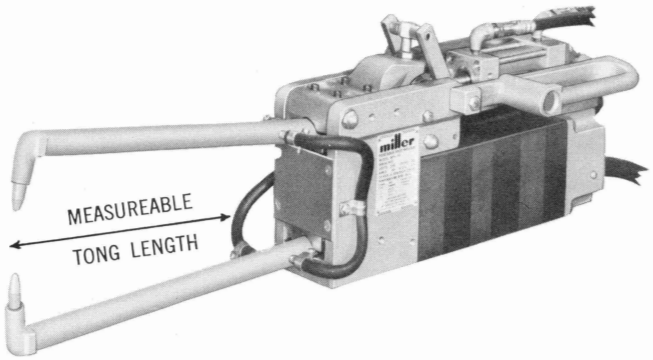
Galvanized steel also requires a longer weld time than mild steel. A slightly greater tong pressure is required to force the zinc aside at the weld area thus permitting the base steel to fuse. Zinc oxides formed from galvanized steel will require additional tip dressing.

These models are not recommended for spot welding aluminum.

# TONGS and TIPS:

Tongs and tips fit either the 10 or 20 KVA spot welders. **They are not included with welder and must be ordered as separate items.** Special tongs made to customer's drawing are available at additional cost. Maximum tong length - 18".

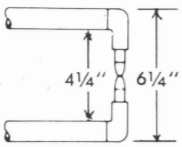
Usable tong length is measured from the center of spot tips to the front water hose connection. Stock item tongs vary in length from 4" to 18".



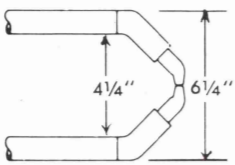

**HOW TO ORDER TONGS AND TIPS.**
Include model, type of tip and stock number on order. Example:
MPS-4, No. 1MT, 040 217

| TONGS | AIR OPERATED | | | | MANUALLY OPERATED | | |
|---|---|---|---|---|---|---|---|
| TONG LENGTH | 4" 10.1 cm | 6" 15.2 cm | 12" 30.4 cm | 18" 45.7 cm | 6" 15.2 cm | 12" 30.4 cm | 18" 45.7 cm |
| THROAT DEPTH | 5" 12.7 cm | 8" 20.3 cm | 13¾" 34.9 cm | 19½" 49.5 cm | 8" 20.3 cm | 13¾" 34.9 cm | 19½" 49.5 cm |
| TIP TO TIP OPENING | 1" 2.5 cm | 2¼" 5.7 cm | 4¼" 10.9 cm | 5¼" 13.3 cm | 1¼" 3.9 cm | 1⅝" 4.1 cm | 2½" 6.3 cm |

## TONGS:




Standard MPS Tongs
90° Head
#1 Morse Taper




Standard MPS Tongs
45° Head
#2 Morse Taper

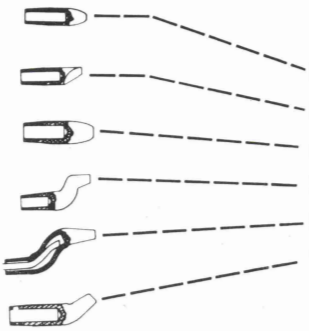
| MODEL | TONG LENGTH | TYPE OF TIP | STOCK NO. | NET WT. |
|---|---|---|---|---|
| MPS-4 | 4" - 90° head | No. 1 Morse Taper | **040 217** | 5 lbs. (2.2 kg) |
| MPS-4 | 4" - 45° head | No. 2 Morse Taper | **040 293** | 5 lbs. (2.2 kg) |
| MPS-6 | 6" - 90° head | No. 1 Morse Taper | **040 218** | 6 lbs. (2.7 kg) |
| MPS-6 | 6" - 45° head | No. 2 Morse Taper | **040 294** | 6 lbs. (2.7 kg) |
| MPS-12 | 12" - 90° head | No. 1 Morse Taper | **040 219** | 8 lbs. (3.6 kg) |
| MPS-12 | 12" - 45° head | No. 2 Morse Taper | **040 295** | 8 lbs. (3.6 kg) |
| MPS-18 | 18" - 90° head | No. 1 Morse Taper | **040 220** | 10 lbs. (4.5 kg) |
| MPS-18 | 18" - 45° head | No. 2 Morse Taper | **040 296** | 10 lbs. (4.5 kg) |

No. 1 Morse Taper is standard on 90° head. No. 2 Morse Taper is standard on 45° head. When not specified, 90° head will be furnished. 90° head may be supplied with No. 2 Morse Taper tip. 45° head may be supplied with No. 1 Morse Taper tip. Must be specified on order.

One pair of FP-2523-7 tips included with MPS 45° tongs.

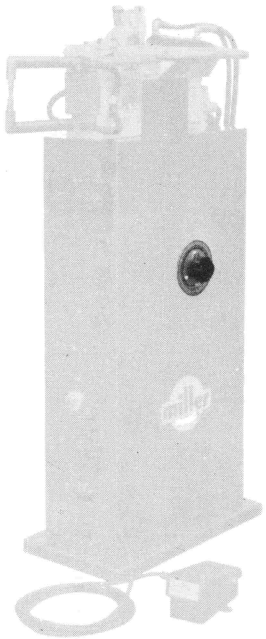
One pair of FP-2523-7 tips includede with MPS 45° tongs.

## TIPS:



| MODEL | TYPE OF TIP | STOCK NO. |
|---|---|---|
| No. A-2407 | No. 1 Morse Taper (Pointed) | **040 223** |
| No. D-2407 | No. 1 Morse Taper (Offset) | **040 224** |
| No. A-2508 | No. 2 Morse Taper (Pointed) | **040 308** |
| SE-4270 | No. 1 Morse Taper (Offset) | **040 226** |
| FA-24210-12 | No. 1 Morse Taper (Offset) | **040 298** |
| FP-2523-7 | No. 2 Morse Taper (Offset) | **040 225** |
| AD-54-1 | Adapts No. 1 Morse Taper tip to No. 2 receptacle. | **040 227** |
| OS-351 | No. 1 Morse Taper flat tips Pair consists of one flat and one standard. | **040 216** |

# OPTIONAL ACCESSORIES



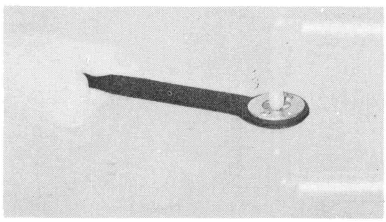
**TEN STEP MHC HEAT CONTROL FOR PEDESTAL MODELS**

**FIELD KITS — For existing models**

For field kits use stock numbers below. Include spot welder model and serial number.

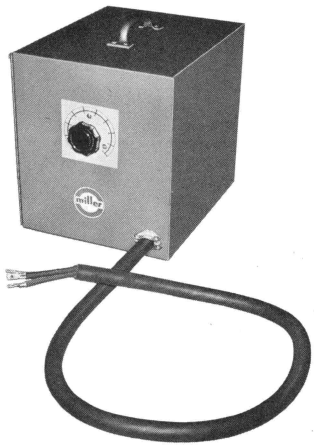
For MPS-FT order
Stock No. **040 834**

For MPS-AFT order
Stock No. **040 835**



**WS-9361 TIP DRESSER**
Stock No. **040 228**

Spot welder dressing tool for No. 1 and No. 2 M. T. (pointed) tips.



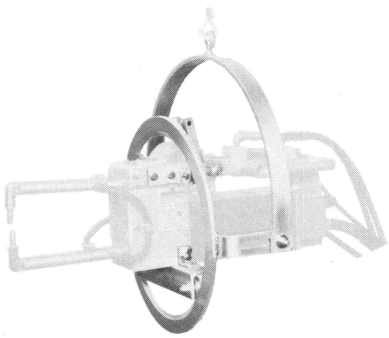
**TEN STEP MHC HEAT CONTROL FOR USE WITH PORTABLE MODELS**

**FIELD KITS — For existing models**

For field kits use stock numbers below. Include spot welder model and serial number.

For MPS-T order Stock No. **040 196**

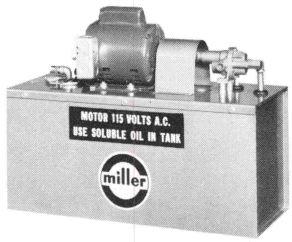
For MPS-AT order
Stock No. **040 833**



**MODEL GB-3** Stock No. **040 194**

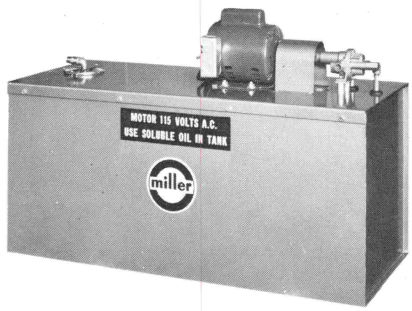
**Gyro bail** hangs the weight of the welder. Used with boom and counterweight or from spring loaded cable. Enables operator to rotate welder 360°.

## WATER COOLANT SYSTEMS




**M2-1** Stock No. **040 001**
Ten gallon capacity. 115 volt, 60 Hz ac motor.

**M2-2** Stock No. **040 004**
Ten gallon capacity. 230 volt, single phase, 60 Hz ac motor.




**MB2-2** Stock No. **040 005**
Forty gallon capacity. 230 volt, single phase, 60 Hz ac motor.

**M2B-1** Stock No. **040 003**
Forty gallon capacity. 115 volt, 60 Hz ac motor.

DISTRIBUTED BY

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"CREATORS OF THE WORLD'S FINEST WELDERS"

FORM: MPS

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